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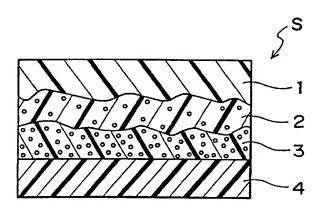
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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: LAMINATE, METHOD FOR PRODUCING THE SAME AND THERMOPLASTIC FOAM ADHESIVE



(57) Abstract: A laminate comprising a pair of thermoplastic resin members having fluctuation of clearance between the adhesion surfaces thereof, and a thermoplastic material foam layer which adheres the pair of the thermoplastic resin members. This laminate is formed from thermoplastic resin as a whole and can absorb the fluctuation of clearance between the members, and the thermoplastic resin members are firmly adhered with the thermoplastic material foam layer.



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International Application No

PL./JP 00/06698 A. CLASSIFICATION OF SUBJECT MATTER
I PC 7 C09J5/08 C08J9/32 B29D9/00 B32B5/18 According to International Patent Classification (IPC) or to both national classification and IPC **B. FIELDS SEARCHED** Minimum documentation searched (classification system followed by classification symbols) IPC 7 C09J B29C B32B Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Electronic data base consulted during the international search (name of data base and, where practical, search terms used) WPI Data, EPO-Internal C. DOCUMENTS CONSIDERED TO BE RELEVANT Relevant to claim No. Category ° Citation of document, with indication, where appropriate, of the relevant passages US 5 945 200 A (SUZUKI HIROSHI) 31 August 1999 (1999-08-31) Χ 1,2,6,7, column 4, line 42 - line 45; claims EP 0 711 658 A (SUMITOMO CHEMICAL CO) 1,2,6,7, χ 15 May 1996 (1996-05-15) page 7, line 10 - line 15; claims 1-3 X DATABASE WPI 1.6 Section Ch, Week 197917 Derwent Publications Ltd., London, GB; Class A14, AN 1979-32176B XP002157054 & JP 54 034383 A (VICTOR CO OF JAPAN), 13 March 1979 (1979-03-13) abstract -/--Further documents are listed in the continuation of box C. Patent family members are listed in annex. X Special categories of cited documents: "T" later document published after the international filing date or priority date and not in conflict with the application but "A" document defining the general state of the art which is not considered to be of particular relevance cited to understand the principle or theory underlying the invention "E" earlier document but published on or after the international "X" document of particular relevance; the claimed invention filing date cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the "O" document referring to an oral disclosure, use, exhibition or document is combined with one or more other, such docu ments, such combination being obvious to a person skilled other means document published prior to the international filing date but later than the priority date claimed "&" document member of the same patent family Date of the actual completion of the international search Date of mailing of the international search report 17. 07. 2001 11 January 2001 Authorized officer Name and mailing address of the ISA European Patent Office, P.B. 5818 Patentiaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,

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De Jonge, S

International Application No
PC., JP 00/06698

C.(Continua	ation) DOCUMENTS CONSIDERED TO BE RELEVANT	
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Х	DATABASE WPI Section Ch, Week 198604 Derwent Publications Ltd., London, GB; Class A13, AN 1986-025669 XP002157055 & JP 60 248749 A (TOYODA GOSEI KK), 9 December 1985 (1985-12-09) abstract	1,6
X	US 3 615 975 A (GILLERN MAURICE F ET AL) 26 October 1971 (1971-10-26) column 1, line 1 - line 62	1,6

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In national application No. PCT/JP 00/06698

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)					
This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:					
Claims Nos.: because they relate to subject matter not required to be searched by this Authority, namely:					
Claims Nos.: because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:					
3. Claims Nos.: because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).					
Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)					
This International Searching Authority found multiple inventions in this international application, as follows:					
see additional sheet					
As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.					
2. As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.					
3. As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:					
4. X No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.: 1-14					
Remark on Protest The additional search fees were accompanied by the applicant's protest. No protest accompanied the payment of additional search fees.					

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-14

Laminate and method for producing the same.

2. Claims: 15-17

Thermoplastic foam adhesive.

'nformation on patent family members

Pt./JP 00/06698

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5945200 A	31-08-1999	NONE	
EP 0711658 A	15-05-1996	AU 696211 B AU 3772095 A CN 1132689 A JP 8207219 A US 6045732 A JP 8224820 A	03-09-1998 23-05-1996 09-10-1996 13-08-1996 04-04-2000 03-09-1996
JP 54034383 A	13-03-1979	JP 1255648 C JP 59031457 B	12-03-1985 02-08-1984
JP 60248749 A	09-12-1985	JP 1517381 C JP 63065695 B	07-09-1989 16-12-1988
US 3615975 A	26-10-1971	NONE	